Humanities & Social Sciences Reviews
eISSN: 2395-6518, Vol 8, No 4, 2020, pp 315-324
https://doi.org/10.18510/hssr.2020.8432

ANTHROPONYMIC STRUCTURE OF ACADEMIC DISCOURSE

Dolzhich E. A.[1*], Dmitrichenkova S. V.[2]
[1*,2]RUDN University, Russia.
Email: [1*]korte@mail.ru, [2]sw.wl@mail.ru

Article History: Received on 18th May 2020, Revised on 29th June 2020, Published on 23rd July 2020

Abstract

Purpose of the study: The article aims to study the anthroponymy structure of academic discourse based on the material of astronautical corpora. To achieve this goal, it is necessary to solve a number of specific tasks: to define the terms "anthroponym" and "eponym", to reveal the structural types of astronautical eponyms, and to identify the functional significance of anthroponyms and eponyms.

Methodology: The method of componential analysis and the descriptive method have been used as the primary research methods applying such techniques as observation, comparison, interpretation, and generalization. The methodological basis of the research includes discourse theory, the theory of precedence, achievements of cognitive linguistics, and studies on problems of terminology.

Main findings: The authors propose to consider anthroponyms and eponymous terms as precedents, which are points of reference in the change of the scientific paradigm, help to systematize scientific knowledge, and navigate in its fund. The results of the study suggest that the anthroponymy structure of academic discourse provides information compression that makes the text concise without reducing information and performs a memorial function.

Applications of this study: The research attempts to contribute to the further study of the academic discourse structure and the analytical description of its components using a cognitive-pragmatic approach. Higher education teachers can use the results of the article in lectures on the theory of academic discourse.

Novelty/originality of this study: Few researchers have addressed astronautical academic discourse, investigating its structural and functional features. This study is the first to analyze the astronautical eponyms as super compressed signs of the precedent research.

Keywords: *Anthroponymic Structure, Academic Discourse, Astronautical Terminology, Anthroponyms, Eponymous Terms.*

INTRODUCTION

The article studies the function of anthroponyms, or proper names, and eponyms, derived from them, in academic discourse. The objective of the work is to describe the anthroponymic structure of academic discourse based on the material of such a wide-ranging field as astronautics. The study makes it possible to evaluate anthroponyms as super compressed signs of precedent knowledge and potential source to form scientific terms.

LANGUAGE AND SOCIETY

The problem of the relationship between language and society is one of the fundamental problems of linguistics. Such well-known linguistic theorists as Ferdinand de Saussure and Jan Baudouin de Courtenay recognized the complexity of the relationship between the structure of the society and the social structure of the language. Linguistic differentiation occurs in the professional and social dialects and languages for particular purposes. The language actively reacts to all processes taking place in the society. Professional groups of people, united by practical activities, have special interests and corresponding forms of language use. Professional languages do not have their own phonetic and grammar systems, but they have their special vocabulary, accessible only to the representatives of this profession. The main characteristics of professional languages are linguistics and content area knowledge, which in our case is astronautics. However, a professional language is not completely isolated from a common language. There is a constant exchange between the existing lexical stock and the specialized language of professional groups: units of a specialized language can expand their meaning and become general vocabulary, words of general vocabulary, on the contrary, can undergo rethinking and go into the specialized language. Proper names are an integral part of the lexical system of the language, which has a number of specific properties, its own laws of development and functioning, and requires special research.

INTERACTION OF OLD, PRECEDENT AND NEW KNOWLEDGE AS MECHANISM TO BUILD A SCIENTIFIC TEXT

The universal law of a scientific text construction is the integration of old, precedent, and new knowledge into its polytextual structure, determined by the continuity of the cognitive process and the creative rethinking of the prior scientific experience. Structurally, the alternation of old, precedent and new knowledge is the most important mechanism for the deployment of a scientific text. A precedent phenomenon, as a rule, does not have special metatext or graphic markers that are required for the subtext of old knowledge. It appeals to the knowledge and memory of the reader, reflects the common apperception base of both sender and receiver of the scientific message. If the concept "text in-text" is applicable to old knowledge, then we can speak of a precedent phenomenon as a "text in a word" (Chernyavskaya,

2017), since it expresses the utmost degree of compression of the proto text content when the source text is compressed to a non-predictive unit and becomes a sign of the whole text. The content of previous knowledge relevant to the author's concept may not receive explicit expression in the scientific text while remaining clear to the prepared reader. This happens when such quanta of old knowledge as laws, hypotheses, theorems are included in the disciplinary fund of a science under the names of their authors, turning into terminated concepts, the possession of which is a condition of professional competence of every scientist. The content of disciplinary knowledge remains in the subtext and constitutes implicit information based on the general professional preparation of the author and the reader.

In such passages, "precedent knowledge" refers to a complete and self-sufficient product of the speech-cognitive activity, a complex sign, which sum of the values of the components is not equal to its meaning (Karaulov, 2010). The precedent text is well known to any member of the professional scientific community. The cognitive base of the precedent text includes an invariant of its perception, repeatedly accessed in the process of communication through statements or symbols associated with this text, which are precedent phenomena.

EPONYMOUS TERMS AS SUPER COMPRESSED PRECEDENT TEXTS

Precedent texts are a result of dialogical interaction between different discourses while operating in scientific communication: a scientist's name, identified with his/her ideas and studies, is included in the foundation of science and becomes a symbol of scientific knowledge. The investigation of precedent texts in academic discourse (Mohan, 2015) is crucial in contemporary general linguistics. Precedent texts represented by anthroponyms are signs of entire scientific texts and significant personal signs, as indicated by the proper names contained in them.

Proper names are not themselves meaningful since they do not carry information about the properties of denotations, as noted by N.V. Podolskaya (Podolskaya, 1988). Of particular interest for the study are proper names, which have become meaningful common nouns as terms or components of terminological units. The use of eponymous terms i.e., terms formed from proper nouns is traditional in the language of science and goes back to the earliest periods of its formation. Solving the problem of eponymous term formation, N.V. Novinskaya (Novinskaya, 2013) raises questions about the semantics of eponyms and the main ways of their formation. The researcher stresses that the use of proper names in the secondary nomination in academic discourse is a dynamic process since it is closely related to the scientific life of a particular linguistic community.

Anthroponyms were the object of various linguistic studies (Mensah, & Rowan, 2019; Fernández Juncal, 2018) in terms of intercultural communication, while this topic in academic discourse has not been sufficiently considered. Astronautical terminology is recognized (Jiachi, & Deshun, 2002) as one of the most developing and little-studied terminological systems. At present, languages for particular purposes, such as the language of astronautics and astronomy, are of increasing linguistic interest because of the growing influence of science and technology on the life of society.

The relevance of the study and objectives

The relevance of this study is due to the growing interest in academic discourse analysis (Dijk, 2014), which allows identifying the specificity of scientific knowledge representation in a language. Keeping this in mind the author aimed to study the anthroponymy structure of academic discourse based on the material of astronautical corpora.

LITERATURE REVIEW

A great deal of interest is now focused on the study of discourse in general, and its different types. T. van Dijk suggests distinguishing between two definitions of discourse. In a broad sense, discourse is a complex communicative event that occurs between the participants of the communication, in a specific temporal, dimensional, and other context. A communicative action can be verbal, written, or have verbal and non-verbal components. In the narrow sense, discourse is an oral or written text, having only one verbal component. From these positions, the concept "discourse" means a completed or ongoing product of a communicative action, its written or oral result, interpreted by recipients (Dijk, 2008). T. van Dijk believes that the language in human society must be viewed not only from the perspective of pragmatic approaches to the discourse but also taking into account such social factors as opinions and attitudes of speakers, their social and ethnic status, the personality characteristics of native speakers with their intentions, feelings and emotions (Dijk, 2014). The term "discourse" can correspond to a certain genre, such as "a collection of works by an author", "legal discourse", "technical discourse", "academic discourse", and others (Dmitrichenkova *et al*., 2017).

As Valeria Chernyavskaya points out, the model to understand discourse interacts with the model for its cognitive processing, thus making it the subject of cognitive linguistics. Since the discourse reflects the hierarchical nature of the different types of knowledge necessary for both generating and understanding the speech, the development of both processes involves strategies for selecting the most significant information, that is significant in this context and for the data of the communicants (Chernyavskaya, 2017).

Academic discourse (Corbett, 2015) is the totality of all available texts verbalizing scientific knowledge because of the cognitive activity of the subjects of science. The texts of academic discourse are interlinked by broad semantic relations and are combined in a communicative and functional style aspect. Scientific texts' interaction takes place inside the

generalized conceptual sphere, which synthesizes various ideas about the world order, consisting of sensually shaped models, worldview structures, and fundamental theoretical knowledge of reality. Thus, academic discourse is grounded in interactional sociolinguistics and ethnomethodological conversation analysis (Heller, & Morek, 2015); it is the process of expressing new knowledge and its justification through a dialogue between old, precedent and new knowledge, in the framework of which the gradual formation of new, conceptual scientific knowledge takes place.

Based on the stated problems of the research, let us turn to the concept of "anthroponomy". Anthroponomy (from Ancient Greek ἄνθρωπος anthrōpos, "human" and ὄνομα, "name") is a branch of onomastics that studies anthroponyms, patronyms, last names, generic names, nicknames and pseudonyms, cryptonyms, anthroponyms of literary works, heroes in folklore (Ryan, 1981).

Anthroponymy, as a science, analyzes the information that a proper name can carry (Khamitova *et al*., 2016). This section of linguistics explores the functions that an anthroponym can perform in discourse. The focus of research in theoretical anthroponymy is the patterns of the emergence and development of anthroponyms, their structure, anthroponymic system, and models of anthroponyms. Applied anthroponymy deals with the problems of proper names, ways of transmitting the same name in different languages (Fernández Juncal, 2018), and creating anthroponymic dictionaries (Zhengdao, 2017).

Anthroponyms are studied in terms of their role and place in communication and naming (Nick, 2017). Incorrect or inappropriate use of anthroponyms in a particular speech situation can lead to a grave cultural or ethical error (Bailey, & Lie, 2013). The existence of anthroponyms is inextricably linked with the culture and history of the society since certain forms of cultural knowledge are embedded in them (Chebet-Choge, 2010).

Relying on the studied literature, one can distinguish the following types of anthroponyms: the first name given at birth; patronym or middle name; last name, i.e., generic or family name; nickname, pseudonym or pen name and anthroponyms that are derivatives of ethnonyms, names of ethnic groups, nations, or nationalities (Bargiela *et al*., 2002). A specific feature of anthroponymic vocabulary is its ability to transform into another category of onyms, to pass from one type of anthroponym to another or go into common nouns, and to form various types of phraseological units and idioms (Karabaev *et al*., 2015).

The use of terms-eponyms, i.e., terms formed from anthroponyms, is traditional in academic discourse and dates back to the earliest periods of its formation (Abel, 2018). Eponymic units are among the major outstanding issues in specialized terminology. The process of eponymization has been considered in the studies devoted mainly to medicine, including studies by such linguists as Rodríguez-Gama *et al*. (2014); Duque-Parra *et al*. (2018); Ma, & Chung (2012); Novinskaya (2013); Varnavskaya, and Varnavsky (2019), etc.

In the "Dictionary of Russian Onomastic Terminology" (Podolskaya, 1988), one can find the following definition: "An eponym is a person who is famous for anything, whose name served to form any other onym". Novinskaya (2013) points out that eponyms are persons whose names are used to create terms. The definition of eponym by the Merriam-Webster Dictionary is as follows: "1. one for whom or which something is or is believed to be named; 2. a name (as of a drug or a disease) based on or derived from an eponym" (Merriam-Webster Dictionary, 2020).

Leychik (2014) defines eponyms as terms that contain in their structure anthroponyms denoting the authors of corresponding objects, phenomena, and units of measure, or assigned to honor of famous figures of science and culture.

Such branches of science as space technology, physics, mathematics, medicine, chemistry, and others have preserved in their terminology the memory of scientists using eponymous terms. Their essential feature is that they contain both modern scientists' proper names and the names of scientists, political and public figures that lived in the past (Cabanac, 2014). For example: Anaxagoras crater, named after a Greek philosopher remembered for his cosmology and for his discovery of the real cause of eclipses, who was the first to propose that the Moon's light reflects the Sun, lunar eclipses being caused by Earth's shadow, with solar eclipses coming from the Moon obscuring the Sun. He declared that the Moon had mountains and that the stars were far distant from the Earth. His ideas on the origins of the matter anticipated the atomic theory.

Eponymous terms in academic discourse reflect the scientific picture of the world, based on practical and theoretical knowledge. Along with the proper names of famous scientists and historical figures, there are different types of names attracted to form eponyms, from popular mythonyms to the names of fictional characters (Fisher, 2013).

Some linguists also classify terms based on toponyms as eponyms (Lins, & Batigália, 2011). One can also define an eponym as a term that contains a proper name (anthroponym, toponym, or mythonym), as well as a common noun denoting a scientific concept (Duque-Parra *et al*., 2018). This statement dramatically expands the scope of eponymy.

In all definitions of the "term", its connection with the concept comes to the fore. A term is a word (or combination of words), representing the unity between a sound sign and an associated concept in the concept system belonging to a certain field of science and technology. It falls within a special (scientific, technical, etc.) language and is created (accepted, borrowed) to express exactly particular concepts and to name individual objects (Yoshimitsu *et al*., 2015).

Concerning the eponymous form, Novinskaya (2013) stresses that terms-eponyms are formed according to the same structural and grammatical principles as terminological combinations in general. Eponyms can be classified into simple terms and terminological combinations; however, an anthroponym is a necessary component existing in these structures.

Hypothesis

The hypothesis is that astronautical eponyms in academic discourse are super compressed signs of the precedent studies devoted to astronautics and at the same time, they are significant personal signs since they contain anthroponyms.

METHODOLOGY

Researchers have been using mixed methods research, taking into account linguistic and cultural context. The method of componential analysis and the descriptive method have been used as the primary research methods applying such techniques as observation and classification. When analyzing the content, traditional methods of language research have been applied in the work: differentiation of the content by groups and the quantitative method. During the course of the analysis, 400 terminological units including anthroponyms have been singled out by the continuous sampling method, and subsequently classified according to their morphology, with a percent distribution calculated in Excel. The source language material includes research papers devoted to studying aerospace science problems (Razoumny *et al*., 2020), as well as the AIAA Aerospace Design Engineers Guide (AIAA, 2003), the Dictionary of Astronomy and (Spitz, & Gaynor, 2014), and space terms glossaries (Braeunig, 2006; National Aeronautics and Space Administration, 2020).

The reliance on precedent texts and their concepts in academic discourse is one of the system-forming features. Nowadays, from the standpoint of precedence, anthroponyms are being studied not only in literary texts but also in academic discourse. Precedent phenomena are widely discussed in the scientific literature of recent years. Karaulov (2010) was the linguist who introduced the term "precedent texts" and defined them as significant texts for a linguistic personality in cognitive and emotional aspects, widely known to the community, to which this linguistic personality belongs. According to Karaulov, precedent texts have paradigmatic nature, since anyone who speaks this language knows their content. Knowledge of precedent texts indicates that the individual is included in the cultural sphere of the society, and their ignorance, in turn, is a signal of the individual's position outside the culture or insufficient involvement in it. The authors propose to apply Karaulov's definition of precedent texts to precedent phenomena in general.

A precedent text can be over-compressed, i.e., reduced to a term-concept, well established in the core of science. In the logical-semantic context, a precedent text is a kind of identifying reference, the actualization of only the name of a scientific object. The content of this object, that is, the integral scientific concept is known both to the author and to the addressee. A precedent text appeals to one's knowledge and memory, reflecting the commonality of the apperception base of a sender and a recipient of the scientific message. Thus, precedent texts are semantic elements of academic discourse.

Eponymous terms are closely connected with the culture of the society and the history of science and technology. In the individual consciousness of a prepared person, as in the collective consciousness of the scientific community, there is a thought formation, a concept that encompasses all the sphere of knowledge obtained on the primary source basis, which is the text written by an outstanding thinker. A scientist's name, the subject of the precedent text, begins to be identified with the concept and comes to be a scientific knowledge sign. Such precedents, being personal signs, contribute to ordering the facts of science. They are points of reference in the change of the scientific paradigm, allow the reader and the author to systematize scientific knowledge, and navigate in its fund.

The methodological basis of the research includes as follows:

- Works of linguists on problems of terminology (Leychik, 2014; Novinskaya, 2013; Podolskaya, 1988);
- Achievements of cognitive linguistics (Demyankov, 2016; Popova *et al*., 2015);
- Discourse theory (Dijk, 2008).

Discourse theory considers discourse as a complex structure with procedural and communicative properties, as a speech stream that is constantly expanding, absorbing features of the era, communicants, and situation. It is concerned with language and highlights how certain language units correlate with human knowledge.

FINDINGS AND DISCUSSION

The lexical composition of scientific-technical texts contains general, general scientific, and terminological vocabulary. The general vocabulary of scientific-technical texts includes the words that perform a text-forming function of the text coherence in many cases. The general scientific vocabulary includes words that are not terms and function in methodological subtexts, denoting basic scientific concepts. An important feature of the general scientific vocabulary is the high frequency of its use due to its methodological and interdisciplinary nature. The general scientific lexicon takes up an intermediate position between the general vocabulary, on the one hand, and the terminological vocabulary, on the other hand (Korotkina, 2018).

Eponymous terms, being an integral part of the English terminology of astronautics, represent an autonomous layer of special vocabulary, which boundaries are open and constantly updated with new nominative units of various structures. The producing base for eponymous names are socially, culturally, and scientifically significant anthroponyms, the totality of which form a special group of proper names, that are precedent and reflect world cognition. Astronautical eponyms in academic discourse are super compressed signs of the precedent studies devoted to astronautics and at the same time, they are significant personal signs, since they contain anthroponyms (Dolzhich, & Dmitrichenkova, 2018).

Structural Types of Astronautical Eponyms

The lexical meaning of precedent names is the convergence of significative and denotative meanings and expresses scientifically relevant information. Accordingly, a proper name begins to be used as a common noun, an adjective, a part of abbreviations (Breban, 2018). As a result of the research, the following structural types of astronautical eponyms have been revealed:

1. Possessives

Eponyms written in the possessive tense and attributing ownership to their namesake made up 26 percent of the total amount and are such as:

Warner's relation; Freeman's law; Arnett's law; Bode's law; Leavitt's law Duvall's law; Kirchhoff's law; Sakurai's object; Hoag's object; Wood's filters; van Maanen's star; Toomre's Q parameter; Stephan's quintet; Schwarzschild's method; Gomez's hamburger; Sanduleak's star; Olbers' paradox; Barnard's star; Paczynski's core mass; Minkowski's object; Kramers' opacity; Hanny's Voorwerp; Dawes' limit; Baily's beads; Baade's window, etc.

2. Non-possessives

This type of terminological units constituted 35 percent; they are as following:

Kaiser effect; Applegate Effect; Baldwin effect; Barr effect; Scott effect; Oosterhoff effect; Serkowski law; Band function; Chabrier initial mass function; Kroupa initial mass function; Moffat function; Schechter function; Appleton layer; Messier object; Compton scattering; Chandrasekhar limit; Hawking radiation, Bok globules, etc.

3. Compounds

Terms containing various proper names may inform about:

- The cooperation of great scientists;
- The subsequent development of an astronautic concept;
- The continuity of theoretical thought;
- A discovery made simultaneously by several scientists.

Such terminological units accounted for 15 percent of all the analyzed terms:

Bardeen–Petterson effect; Alcock–Paczynski effect; Larson–Tinsley effect; Rubin–Ford effect; Kennelly–Heaviside layer; Ostriker–Vishniac effect; Schmidt–Kennicutt law; Hale–Nicholson law; Appleton–Barnett layer; Thorne–Zytkow object; Becklin–Neugebauer object; Herbig–Haro object; Titius–Bode law, Ginzburg–Landau equations, etc.

4. Simple

Eponyms in which an anthroponym has been fully adopted and has become the common name for a unit of measurement named after its developer. A distinctive feature of unit names are their corresponding unit symbols, they make up 8.35 percent:

kelvin (K) is the common name for a unit of thermodynamic temperature named after Lord Kelvin; becquerel (Bq) for radioactivity after Antoine Henri Becquerel;

coulomb (C) for electric charge after Charles-Augustin de Coulomb;

henry (H) for inductance after Joseph Henry;

joule (J) for energy, work, and heat after James Prescott Joule;

eotvos (E) for gravitational gradient after Loránd Eötvös;

angstrom (Å) for distance after Anders Jonas Ångström;

curie (Ci) for radioactivity after Marie Curie and Pierre Curie;

siemens (S) for electrical conductance after Werner von Siemens;

pascal (Pa) for pressure after Blaise Pascal;

tesla (T) for magnetic flux density after Nikola Tesla;

hertz (Hz) for frequency after Heinrich Rudolf Hertz;

gauss (G or Gs) for magnetic flux density after Carl Friedrich Gauss;

newton (N) for force after Sir Isaac Newton;

debye (D) for electric dipole moment after Peter Debye,

langley (ly) for solar radiation after Samuel Pierpont Langley, etc.

5. Suffix-based derivatives

Eponyms in which the anthroponym is combined with a suffix to make a new word amounted to 5 percent of the total:

Hamiltonian rocket is named after Sir William Rowan Hamilton;

Dobsonian telescope named after John Dobson;

Newtonian telescope named after Isaac Newton;

Apollonian gasket, Apollonian circles are named after Apollonius of Perga;

Galilean moons after Galileo Galilei;

Lagrangian model after Joseph-Louis Lagrange;

Tychonic system after the Danish astronomer Tycho Brahe;

Copernican principle, copernicium after Nicolaus Copernicus;

Abelian groups after Niels Henrik Abel;

Amperian loop after André-Marie Ampère;

ohmic device named after Georg Ohm;

Laplacian field, Laplacian matrix after Pierre-Simon Laplace;

Lorentzian function after Hendrik Lorentz;

Magellanic Clouds named after Ferdinand Magellan.

6. Clippings

Eponyms in which an anthroponym been shortened constituted 0.15 percent:

farad – Michael Faraday; volt – Alessandro Volta; Gal – Galileo Galilei; Bark scale – Heinrich Barkhausen; poise – Jean Léonard Marie Poiseuille, etc.

7. Acronyms

The phenomenon of abbreviation is common in academic discourse (Caon, 2016) and influences the formation of eponymous terms in astronautical terminology. In this research, they represent 7 percent. A vast majority of such terminological units are initial abbreviations, such as:

4M – Manfred Memorial Moon Mission was the first private lunar probe to successfully fly by the Moon. Lux Space led it in honor of the OHB Systems founder, Professor Manfred Fuchs.

HRD – The Hertzsprung–Russell diagram, named after Ejnar Hertzsprung, Danish astronomer, and Henry Norris Russell, American astronomer, is a scatter plot of stars showing the relationship between the stars' absolute magnitudes or luminosities versus their stellar classifications or effective temperatures.

CXO – Chandra X-Ray Observatory is a telescope named after Subrahmanyan Chandrasekhar, who was an Indian American astrophysicist. The telescope detects X-ray emission from very hot regions of the Universe such as exploded stars, clusters of galaxies, and matter around black holes.

HST – The Hubble Space Telescope named after the astronomer Edwin Hubble is a space telescope launched into the low Earth orbit in 1990 and remains in operation.

HeDI – Helium Doppler Imager named after Austrian physicist Christian Doppler.

RL – Landau length. The superconducting coherence length is one of two parameters in the Ginzburg–Landau theory of superconductivity.

RD – Debye radius is named after Peter Debye. A Debye sphere is a volume whose radius is the Debye length. Debye length is an essential parameter in plasma physics.

Humanities & Social Sciences Reviews
eISSN: 2395-6518, Vol 8, No 4, 2020, pp 315-324
https://doi.org/10.18510/hssr.2020.8432

8. Mythonyms

Mythonyms were popular in the early period of the language of science (Džuganová, 2019). For example, the name of Andromeda, daughter of the Aethiopian king Cepheus in Greek mythology, gave rise to the Andromeda Galaxy, the Andromedids meteor shower, and the Andromeda constellation. The genitive form of Cassiopeia, queen of Eritrea in Greek mythology, is used when naming stars, such as α Cassiopeiae; a group of six stars in Cassiopeia is Cassiopeia's Chair. The Eta Aquarids meteor shower named after Aquarius is also identified with beautiful Ganymede, a youth in Greek mythology and the son of Trojan king Tros, who was taken to Mount Olympus by Zeus to act as cup-carrier to the gods. The Constellation Hercules, named after the Roman mythological hero adapted from the Greek hero Heracles, is the fifth largest of the modern constellations. Orion, in Greek mythology, a giant and very handsome hunter, was identified with the constellation known by his name: The Orion constellation and asterism Orion's Belt. The Perseus Cluster is a cluster of galaxies in the constellation Perseus, named after the slayer of the Gorgon Medusa and the rescuer of Andromeda from a sea monster. Also, American launch vehicles, booster rockets, and missions were named after gods, deities and ancient heroes, such as: the launch vehicles Atlas-Centaur, Apollo, Titan-Centaur, Thor Agena, Mercury-Atlas; the Command Module Odyssey; the four-stage American booster rocket Juno; the lunar modules Aquarius, Antares, Falcon, and Orion; the Mercury and Apollo missions. Such kind of eponymous terms made up 3.5 percent of all the analyzed terms.

Structurally, astronautical eponymous terms most often represent two-component terminological combinations, which, along with the proper name, include a thematic core with a generalized meaning, such as function, effect, law, object, etc. They may be possessive and non-possessive.

The second most numerous group includes compound eponymous terms built by combining two proper names and a common noun. These eponyms denote the cooperation of the scientists, the continuity of theoretical thought, or a discovery made simultaneously by several scientists. Thinkers, inventors, and scientists are often eponymous people, inspiring the eponymous terms that serve to describe their inventions or discoveries. Simple eponyms and clippings derived from anthroponyms have become the common name for a unit of measurement. Mythical characters are the source of naming constellations, stars, clusters, and launch vehicles. The share distribution of the astronautical eponyms in the analyzed academic discourse devoted to astronautics is shown in Figure 1.

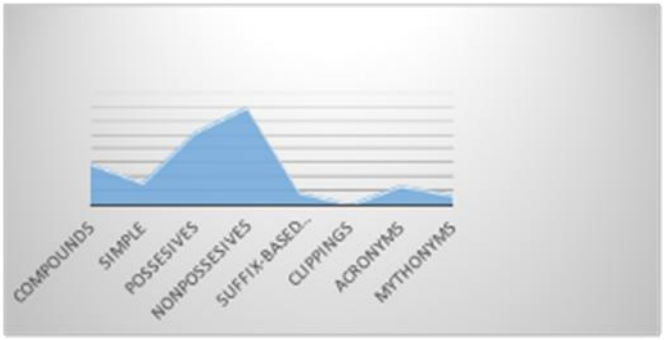

Figure 1: Share distribution of the astronautical eponyms in the analyzed texts

Source: Own calculations, exposed in the graph created in Microsoft Excel. The use of astronautical eponymous terms in a circle of narrow specialists provides a quick understanding, conveys the continuity of knowledge, and reflects the main stages in the development of science, the struggle of opinions and views, and the emergence of the human scientific picture of the world.

The formation and comprehension of astronautical eponymous terms occur within the framework of a private cognitive matrix that unites various conceptual areas of space science knowledge. Individual linguistic units of the linguistic context, the semantics of which reflects the essence of the corresponding cognitive setting, carry out their actualization.

CONCLUSION

The appearance of eponyms, i.e., terms derived from anthroponyms, in academic discourse shows the personification of science. Eponyms begin to be identified with a concept and become signs of scientific knowledge. The use of eponymous terms in academic discourse reflects the scientific picture of the world at the language level. Astronautical eponyms in academic discourse are super compressed signs of the precedent studies devoted to astronautics. At the same time, they are significant personal signs, since they contain anthroponyms.

The analysis of the peculiarities of the English astronautical terminology allows drawing the following conclusions: precedent phenomena associated with the anthroponyms denoting the names of the famous scientists are the most recurrent in the academic discourse. Accordingly, an anthroponym begins to be used as a common noun, an adjective, or a part of abbreviations.

As the result of the research, the following structural types of English astronautical eponyms have been revealed: possessives, non-possessives, compounds, simple, suffix-based derivatives, clippings, acronyms, and mythonyms, most often represented by a two-component terminological combination that is a proper name in a non-possessive state and a common noun with a generalized meaning.

The main function of astronautical eponymous terms is to store scientific knowledge and to perform a culture-historical task, i.e., to immortalize a great scientist's name and to mark the main stages in the development of science reflecting the priority of scientists from different countries and various scientific schools.

In eponymous terms, a person manifests as a language personality, a national and global cultural prototype fixed in the lexical system carrier of scientific thought, reflected in the dictionaries, glossaries, and reference books. Science as the objectification of culture becomes the medium in which one can observe humans, which is why academic discourse obtains an anthroponymic structure. One should consider that astronautical terminology is an essential subject of research in connection with its intensive development, and studies on the topic contribute to the general term theory.

LIMITATION AND STUDY FORWARD

Studies of different types of academic discourses are particularly promising as everything connected with science that is the crucial component of the culture of modern society and is in constant development. Linguistic studies allow expanding the empirical base of the general term theory and studying the functional features of eponymous units in languages for particular purposes. Linguistic studies solve an important theoretical problem of changing the status and functions of a proper name. The study of eponymous terms makes it possible to evaluate proper names as a potential source of special concepts' naming. This study had sample size limitations given the sensitive aspect of astronautical research papers that sometimes are not publicly available. Further researchers should base their study on a larger sample size to achieve high accuracy results.

ACKNOWLEDGEMENT

This research has been prepared with support from RUDN University Program 5-100.

AUTHORS CONTRIBUTION

In this research, the first and corresponding author is the main contributor to the research paper, having reviewed the literature on the topic, collected and analysed data. The co-author contributed through supervision and partly with data analysis.

REFERENCES

1. Abel, E. L. (2018). Syphilis: The History of an Eponym. *Names: A Journal of Onomastics*, *66*(2), 96–102. https://doi.org/10.1080/00277738.2017.1415522
2. AIAA, Inc. (2003). *AIAA Aerospace Design Engineers Guide* (5th ed.). Professional Engineering Publishing Ltd.
3. Bailey, B., & Lie, S. (2013). The Politics of Names among Chinese Indonesians in Java. *Journal of Linguistic Anthropology*, *23*(1), 21–40. https://doi.org/10.1111/jola.12003
4. Bargiela, F., Boz, C., Gokzadze, L., Hamza, A., Mills, S., & Rukhadze, N. (2002). Ethnocentrism, Politeness and Naming Strategies. In *Working Papers on the Web. Vol. 3: Linguistic Politeness and Context*. Retrieved June 26, 2020, from https://extra.shu.ac.uk/wpw/politeness/bargiela.htm
5. Braeunig, R.A. (Ed.). (2006). *Glossary of Space Technology – Rocket and Space Technology*. Retrieved June 26, 2020, from http://www.braeunig.us/space/glossary.htm
6. Breban, T. (2018). Proper Names Used as Modifiers: A Comprehensive Functional Analysis. *English Language and Linguistics*, *22*(3), 381–401. https://doi.org/10.1017/S1360674316000514
7. Cabanac, G. (2014). Extracting and Quantifying Eponyms in Full-Text Articles. *Scientometrics*, *98*(3), 1631–1645. https://doi.org/10.1007/s11192-013-1091-8
8. Caon, M. (2016). Abbreviations, Initialism and Acronyms: Their Use in Medical Physics (THUMP). *Australasian Physical & Engineering Sciences in Medicine*, *39*, 11–12. https://doi.org/10.1007/s13246-016-0423-4
9. Chebet-Choge, S. (2010). The Case of Dead and Non-Used Nandi Anthroponyms. *AlterNative: An International Journal of Indigenous Peoples*, *6*(1), 38–53. https://doi.org/10.1177/117718011000600104
10. Chernyavskaya, V.E. (2017). *Text in the Medial Space*. Moscow: URSS.
11. Corbett, J. (2015). *Academic Discourse*. Wiley Online Library. ttps://doi.org/10.1002/9781118611463.wbielsi083
12. Demyankov, V.Z. (2016). *Linguistics and Semiotics of Cultural Transfers: Methods, Principles, Technologies*. Moscow: Kulturnaya revolyutsiya.
13. Dijk, T.A. van. (2008). *Discourse and Context. A Socio-Cognitive Approach*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511481499
14. Dijk, T.A. van. (2014). *Discourse and Knowledge. A Sociocognitive Approach*. Cambridge University Press. https://doi.org/10.1017/CBO9781107775404

15. Dmitrichenkova, S.V., Dolzhich, E.A., & Popova, T.G. (2017). Cognitive & Pragmatic Aspects of Polycodedness of a Scientific Text, A Case Study of the Spanish Language. *International Journal of Applied Linguistics & English Literature*, *6*(1), 128–137. https://doi.org/10.7575/aiac.ijalel.v.6n.1p.128
16. Dolzhich, E., & Dmitrichenkova, S. (2018). Precedence in Scientific Discourse. *Espacios*, *39*(22). Retrieved June 26, 2020, from https://www.revistaespacios.com/a18v39n22/a18v39n22p29.pdf
17. Duque-Parra, J.E., Barco-Ríos, J., & Dávila-Alzate, N. (2018). Los epónimos en las ciencias médicas: errores históricos que originan injusticias. *Revista de la Facultad de Medicina*, *66*(1), 87–98. https://doi.org/10.15446/revfacmed.v66n1.61720
18. Duque-Parra, J.E., Barco-Ríos, J., & Restrepo, A. (2018). ¿Algunos Epónimos y Topónimos como Coincidencias Terminológicas? *International Journal of Morphology*, *36*(3), 1028–1030. https://doi.org/10.4067/S0717-95022018000301028
19. Džuganová, B. (2019). Medical Language – A Unique Linguistic Phenomenon. *JAHR – European Journal of Bioethics*, *10/1*(19), 129–145. https://doi.org/10.21860/j.10.1.7
20. Fernández Juncal, C. (2018). Evolution of Anthroponyms in an Area of Linguistic Transition: A Socio-Onomastic Study. *Names: A Journal of Onomastics*, *66*(2), 85–95. https://doi.org/10.1080/00277738.2018.1453275
21. Fisher, S. (2013). Speaking of No One: The Logical Status of Fictional Proper Names. *Names: A Journal of Onomastics*, *33*(3), 145–157. https://doi.org/10.1179/nam.1985.33.3.145
22. Heller, V., & Morek, M. (2015). Academic Discourse as Situated Practice: An Introduction. *Linguistics and Education*, *31*, 174–186. https://doi.org/10.1016/j.linged.2014.01.008
23. Jiachi, Y., & Deshun, Ch. (2002). Experiences and Problems of the Multilingual Astronautical Terminology. *Acta Astronautica*, *50*(2), 79–81. https://doi.org/10.1016/S0094-5765(01)00194-1
24. Karabaev, M.I., Abdullina, G.R., & Ishkildina, Z.K. (2015). Bashkir Onomatology in the Light of Modern Linguistics. *Mediterranean Journal of Social Sciences*, *6*(3S3), 73–82. https://doi.org/10.5901/mjss.2015.v6n3s3p73
25. Karaulov, Yu.N. (2010). *The Russian Language and Linguistic Personality*. Moscow: LKI.
26. Khamitova, L.M., Zakirova, L.M., Burenkova, O.M., Gilyazeva, E.N. (2016). Semantic Analysis of Onyms in Modern American Language. *Russian Linguistic Bulletin*, *4*(8), 48–50.
27. Korotkina, I. (2018). Classical Elements and Word-Formation in Academic Discourse. *Linguistics*, *22*(2), 389–403. https://doi.org/10.22363/2312-9182-2018-22-2-389-403
28. Leychik, V.M. (2014). *Terminology. Subject, Methods, Structure*. Moscow: Librokom.
29. Lins, W.A., & Batigália, F. (2011). Anatomical Eponyms in Cardiology from to the 60s to the XXI Century. *Revista Brasileira de Cirurgia Cardiovascular*, *26*(1), 98–106. https://doi.org/10.1590/S0102-76382011000100018
30. Ma, L, & Chung, K.C. (2012). In Defense of Eponyms. *Plastic and Reconstructive Surgery*, *129*, 896–898. https://doi.org/10.1097/PRS.0b013e31824aa083
31. Mensah, E., & Rowan, K. (2019) African Anthroponyms: Sociolinguistic Currents and Anthropological Reflections. *Sociolinguistic Studies*, *13*(2-4), 157–170. https://doi.org/10.1558/sols.37819
32. *Merriam-Webster Dictionary*. (2020). Retrieved March 21, 2020, from https://www.merriam-webster.com
33. Mohan, B.A. (2015). Knowledge Structures and Academic Discourse. *Word*, *40*(1-2), 99-115. https://doi.org/10.1080/00437956.1989.11435799
34. National Aeronautics and Space Administration. (2020). *Glossary of Aerospace Terms*. Retrieved June 26, 2020, from https://www.grc.nasa.gov/www/k-12/TRC/laefs/laefs_g.html
35. Nick, I.M. (2017). Names, Grades, and Metamorphosis: A Small-Scale Socio-onomastic Investigation into the Effects of Ethnicity and Gender-Marked Personal Names on the Pedagogical Assessments of a Grade School Essay. *Names: A Journal of Onomastics*, *65*(3), 129–142. https://doi.org/10.1080/00277738.2017.1304100
36. Novinskaya, N.V. (2013). Terms-Eponyms in the Language of Science. *Vestnik of RUDN University. Series: Russian and Foreign Languages and Methods of Their Teaching*, *4*, 36-40. Retrieved June 26, 2020, from https://cyberleninka.ru/article/n/terminy-eponimy-v-yazyke-nauki
37. Podolskaya, N.V. (1988). *Dictionary of Russian Onomastic Terminology*. Moscow: Nauka.
38. Popova, Z.D., & Sternin, I.A. (2015). *Language and the National Picture of the World*. Moscow; Berlin: Direct Media.
39. Razoumny, Y.N., Graziani, F., Guerman, A.D., & Contant, J.M. (2020). First IAA/AAS SciTech Forum on Space Flight Mechanics and Space Structures and Materials, Nov. 13-15, 2018, Moscow, Russia. *Advances in the Astronautical Sciences Series*, *170*.
40. Rodríguez-Gama, A., Donado-Moré, A.F., & Salcedo-Quinche, M.P. (2014). Reflexiones en torno a los epónimos en medicina: presente, pasado y futuro. *Revista de la Facultad de Medicina*, *62*(2), 305–317. https://doi.org/10.15446/revfacmed.v62n2.45428
41. Ryan, E. (1981). Aristotle on Proper Names. *Aperion: A Journal of Ancient Philosophy and Science*, *15*(1), 38–47. https://doi.org/10.1515/APEIRON.1981.15.1.38
42. Spitz, A., & Gaynor, F. (2014). *Dictionary of Astronomy and Astronautics*. Rowman & Littlefield Publishers, Inc.

43. Varnavskaya, E.V., & Varnavsky, V. S. (2019). Eponyms and Politics: Semasiological Problems. *Concept*, *3*, 24.
44. Yoshimitsu, T., McKenna-Lawlor, S., Candel, D., Contant, J-M., & Ninomiya, K. (2015). IAA Multilingual Space Dictionary, Current Status and Future Prospects. *Acta Astronautica*, *117*, 64–72. https://doi.org/10.1016/j.actaastro.2015.07.031
45. Zhengdao, Y. (2017). *The Semantics of Nouns*. Oxford University Press.

